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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/319,411

10/06/94

NIELSEN

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EXAMINER

JOHN W CALDWELL
WOODCOCK WASHBURN KURTZ
MACKIEWICZ & NORRIS
ONE LIBERTY PLACE 46TH FLOOR
PHILADELPHIA PA 19103

MARSCHEI, A

ART UNIT

PAPER NUMBER

1631

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08/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/319,411

Applicant(s)

Nielsen et al.

Examiner

Ardin Marschel

Art Unit

1631



– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Jun 4, 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1, 5, 8-10, 12, 13, 15, 20, 22-24, 30-33, 37, and 39-52 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1, 5, 8-10, 12, 13, 15, 20, 22-24, 30-33, 37, and 39-52 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Applicants' arguments, filed 6/4/01, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 1, 5, 8-10, 12, 13, 15, 20, 22-24, 30-33, 37, 39-43, 45, 46, 48, and 50 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shah et al. (P/N 5,705,333).

This rejection is maintained and reiterated from the

previous office action, mailed 11/27/00. Applicants argue that Shah et al. is not prior art due to the priority document; serial number 08/108,591; predating the Shah et al. filing date and that said priority document discloses the embodiments in Shah et al. which form the basis for the rejection. Consideration of said priority document reveals that the attachment sites for lysine, crosslinking agents, etc. are only at terminal positions and not at internal or intervening between termini positions in the PNA polymers therein. Thus, said 08/108,591 lacks disclosure in support of priority regarding said internal/intervening conjugate practice which was noted as included in Shah et al. This also makes the argument regarding the nucleobase reporter group issue moot in overcoming this rejection. Thus, 08/108,591 is insufficient to predate the Shah et al. disclosure.

Claims 8-10, 15, 20, 22-24, 30-33, 37, 40, 41, and 45-50 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lobberding et al. (P/N 5,623,049).

This rejection is maintained and reiterated from the previous office action, mailed 11/27/00. Applicants also argue this rejection regarding the priority document 08/108,591. This argument is also non-persuasive here in that the Lobberding et al. conjugates also include internal or intervening conjugate groups which are not predated by 08/108,591.

The following double patenting rejections are reiterated and maintained from the previous office action, mailed 11/27/00, and as necessitated by amendment regarding the newly added claims which are also embodiments within the documents on which the double patenting rejections are based.

The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 5, 8-10, 12, 13, 15, 20, 22-24, 30-33, 37, 39-43, and 45-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 5,539,082. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claims 1 and 2 of the Patent include PNAs with

lysine at one terminus. It is well known that Lysine is a crosslinking agent in various biomolecules, such as protein as a result of its amino side chain. This is also an embodiment of instant claims 1, 40, and 50, for example, wherein a crosslinking agent at a terminus of a PNA is a specie therein. It is also noted that instant claim 5 includes a conjugate bound to a tether which tethers a nucleobase. If a terminal nucleobase containing PNA moiety is the tethered nucleobase and the penultimate PNA monomer moiety contains a nucleobase this is within the definition of a conjugate which is a "reporter molecule" as given in instant claim 5. Such PNAs are also species of claims 1 and 2 of the Patent. Instant claims 30-33 require either an L or R3 to be a conjugate. It is noted that a conjugate includes a reporter molecule which includes a nucleobase which is well known, as well as commonly utilized, for UV detectability. Similarly, instant claims 37 and 39 includes such species as described above with more specific PNA chemical structure thus also supporting this rejection over the Patent. It is noted that instant claims 39 and 49 require an R group on the linkage to the nucleobase to be a conjugate. Such R groups are given in the Patent in that alkylthio or amino groups are present as options which are well known crosslinking agent sites. Instant claims 41, 47, and 48 require a conjugate at certain R groups which includes linkages in the backbone of the PNA. Such conjugates may be crosslinking

agents as in an amino acid side chain such as lysine which is a side chain embodiment given as R⁷' in claims 1 and 2 of the Patent thus documenting a common embodiment. Instant claims 42 and 43 are directed to a monomer as is claim 3 of the Patent wherein at least the R group or some group on the nucleobase attachment must be a conjugate which includes crosslinking agents such as alkylthio or amino moieties which are also options in the nucleobase attachments of the Patent claim 3. Instant claims 45 and 46 require a conjugate on the C or D groups which has been noted above as being a specie of the Patent claims via the options of amino acid side chains being at said R⁷'.

Claims 1, 5, 8-10, 12, 13, 15, 20, 37, 39-41, 47-49, 51, and 52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,773,571. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 1 of the Patent include PNAs with various biomolecules at one terminus. It is well known that certain of these biomolecules are a crosslinking agent, such as peptides or proteins, as a result of their amino acid side chain content. This is also an embodiment of instant claims 1 and 40, for example, wherein a crosslinking agent at a terminus of a PNA is a

specie therein. It is also noted that instant claim 5 includes a conjugate bound to a tether which tethers a nucleobase. If a terminal nucleobase containing PNA moiety is the tethered nucleobase and the penultimate PNA monomer moiety contains a nucleobase this is within the definition of a conjugate which is a "reporter molecule" as given in instant claim 5. Such PNAs are also species of claim 1 of the Patent. Similarly, instant claims 37 and 39 includes such species as described above with more specific PNA chemical structure thus also supporting this rejection over the Patent. It is noted that instant claims 39 and 49 require an R group on the linkage to the nucleobase to be a conjugate. Such R groups are given in the Patent in that alkylthio or amino groups are present as options which are well known crosslinking agent sites. Instant claims 41, 47, and 48 require a conjugate at certain R groups which includes linkages in the backbone of the PNA. Such conjugates may be crosslinking agents as in an amino acid side chain such as lysine which is a side chain embodiment given as R⁷ in claim 1 of the Patent thus documenting a common embodiment.

Claim 50 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5, and 8 of U.S. Patent No. 5,786,461. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set

of claims are common embodiments between said sets of claims. For example, claim 1 of the Patent include PNAs with various side chains off the backbone, which include lysine side chains which are well known to be crosslinking agents, as well as a reporter molecule as an L group. A reporter molecule is instantly included as a conjugate. Instant claim 50 includes reporter molecules as the L group in the basic PNA structures therein which includes the structure of claim 1 of the Patent.

Claims 8-10, 15, 20, 30-33, 37, 40, 41, 47-49, 51, and 52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 9 of U.S. Patent No. 5,719,262. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claims 1 and 9 of the Patent include PNAs with various side chains off the backbone, which include lysine side chains which are well known to be crosslinking agents, as well as a reporter molecule as an L group. A reporter molecule is instantly included as a conjugate via the nucleobase therein as an L group. These claims of the Patent also contain the basic PNA structure, which similar to the above rejections are summarized as also being in the instant claims. The Patent claims also include reporter molecules as the L group in the

basic PNA structures therein which includes species of the instant claims which also require this. It is lastly noted that Lysine, which is a crosslinking agent, is an option of claim 1 of the Patent which is also a specie of instant claim 40.

Claims 8-10, 15, 20, 30-33, 37, 40, 41, 47-49, 51, and 52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4, 5, 9, and 40 of copending application Serial No. 08/108,591. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following common embodiments between the claims of the copending application and the instant application summarized as follows: Claims 4, 5, 9, and 40 of the copending application include PNAs with various side chains off the backbone, which include lysine side chains which are well known to be crosslinking agents, as well as a reporter molecule as an L group. A reporter molecule is instantly included as a conjugate via the nucleobase therein as an L group. These claims of the copending application also contain the basic PNA structure, which similar to the above rejections are summarized as also being in the instant claims. The copending application claims also include reporter molecules as the L group in the basic PNA structures therein which includes species of the instant claims which also require this. It is lastly noted that Lysine, which is a crosslinking agent, is a

terminus option of claims 4, 5, and 9 of the copending application which is also a specie of instant claim 40.

This is a *provisional* obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 5, 8-10, 12, 13, 15, 20, 37, 39-41, 47-49, 51, and 52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2, 6, 7, 9, 22, 24, 25, 27, 35, 37-39, and 44 of copending application Serial No. 08/275,951; taken in view of Switzer et al. (Bioch. 32:10489[1993]). Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 1 of the copending application include PNAs with various biomolecules at one terminus, but requiring at least one C-pyrimidine as an L group. It is well known that certain of these biomolecules are a crosslinking agent, such as peptides or proteins, as a result of their amino acid side chain content. This is also an embodiment of instant claims 1 and 40, for example, wherein a crosslinking agent at a terminus of a PNA is a specie therein. It is also noted that instant claim 5 includes a conjugate bound to a tether which tethers a nucleobase. If a terminal nucleobase containing PNA moiety is the tethered

nucleobase and the penultimate PNA monomer moiety contains a nucleobase this is within the definition of a conjugate which is a "reporter molecule" as given in instant claim 5. Such PNAs are also species of claim 38 of the copending application.

Similarly, instant claims 37 and 39 includes such species as described above with more specific PNA chemical structure thus also supporting this rejection over the copending application.

It is noted that instant claims 39 and 49 require an R group on the linkage to the nucleobase to be a conjugate. Such R groups are given in the copending application claims in that alkylthio or amino groups are present as options which are well known crosslinking agent sites. Instant claims 41, 47, and 48 require a conjugate at certain R groups which includes linkages in the backbone of the PNA. Such conjugates may be crosslinking agents as in amino or alkylthio groups that are cited as options for the backbone R groups in claim 38 of the copending application thus documenting a common embodiment. The remaining claims of the copending application are included herein as they include a basic PNA polymer as also claimed in claim 38 of 08/275,951. The equivalent substitution of C-pyrimidine nucleobase for other nucleobases, such as in the instant claims, is lacking in 08/275,951 but Switzer et al. clearly describe the equivalence of such nucleobases in the abstract and the document as a whole. Such functional equivalents are deemed thus suggested and

motivated thereby for documenting the common embodiments between the instant claims and those of 08/275,951.

This is a *provisional* obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 22-24, 45, 46, and 50 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8, 34, 35, 37, 40-47, 49-51, 53-56, 61-63, 66-69, 71-76, and 89-93 of copending application Serial No. 08/468,719. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 49 of the copending application include PNAs with various side chains off the backbone, which include alkylthio or amino side chains which are well known to be crosslinking agents, as well as a reporter molecule as an L group. A reporter molecule is instantly included as a conjugate. Instant claims 22-24, 45, 46, and 50 includes reporter molecules as the L group in the basic PNA structures as well as backbone conjugate moieties as noted above which therefore includes the structure of claim 49 of the copending application. The remaining claims of the copending application are included herewith due to their being limited to basic normal PNA components which are also those of the instant

claim.

This is a *provisional* obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 5, 8-10, 15, 20, 30-33, 37, 40, 41, 47-49, 51, and 52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5, and 13 of copending application Serial No. 08/686,114; taken in view of Summerton et al. (WO 86/05518). Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 1 of the copending application include PNAs with Lysine at one terminus, but requiring one 2,6-diaminopurine as an L group. It is well known that Lysine is a crosslinking agent, such as when present in peptides or proteins. This is also an embodiment of instant claims 1 and 40, for example, wherein a crosslinking agent at a terminus of a PNA is a specie therein. It is also noted that instant claim 5 includes a conjugate bound to a tether which tethers a nucleobase. If a terminal nucleobase containing PNA moiety is the tethered nucleobase and the penultimate PNA monomer moiety contains a nucleobase this is within the definition of a conjugate which is a "reporter molecule" as given in instant

claim 5. Such PNAs are also species of the claims of the copending application. Similarly, instant claims 37 and 39 includes such species as described above with more specific PNA chemical structure thus also supporting this rejection over the copending application. Instant claims 41, 47, and 48 require a conjugate at certain R groups which includes linkages in the backbone of the PNA. Such conjugates may be crosslinking agents as in alkylamine groups that are cited as options for the backbone R groups in claim 1 of the copending application thus documenting a common embodiment. The remaining claims of the copending application are included herein as they include a basic PNA polymer as also claimed in claim 1 of 08/686,114. The equivalent substitution of a 2,6-diaminopurine nucleobase for other nucleobases, such as in the instant claims, is lacking in 08/686,114 but Summerton et al. clearly describe the equivalence of such nucleobases in the abstract and the document as a whole. Such functional equivalents are deemed thus suggested and motivated thereby for documenting the common embodiments between the instant claims and those of 08/686,114. Summerton et al. (WO 86/05518) motivates and suggests that nucleobases for PNAs include 2,6-diaminopurine on page 20, line 30, through page 21, line 7, and specifically motivates such a base type for stronger base pair bonding for adjusting PNA affinity on page 48, lines 1-22, if desired. Thus, it would have been obvious to someone of

ordinary skill in the art at the time of the instant invention to substitute such nucleobases for natural nucleobases within the PNA oligomer practice of the instant application; thus resulting in the practice of the claims of the copending application. A specific motivation for stronger base pair bonding is hereby pointed to on page 48 of Summerton et al. (WO 86/05518), as desired for PNA design.

This is a *provisional* obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 5, 8-10, 12, 13, 15, 20, 37, 39-41, 47-49, 51, and 52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2, 6, 7, 34, 35, 38, 40, and 42 of copending application Serial No. 08/765,798; taken in view of Switzer et al. (Bioch. 32:10489[1993]). Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 40 of the copending application include PNAs with various biomolecules at one terminus, but requiring at least one C-pyrimidine as an L group. It is well known that certain of these biomolecules are a crosslinking agent, such as peptides or proteins, as a result of their amino acid side chain content.

This is also an embodiment of instant claims 1 and 40, for example, wherein a crosslinking agent at a terminus of a PNA is a specie therein. It is also noted that instant claim 5 includes a conjugate bound to a tether which tethers a nucleobase. If a terminal nucleobase containing PNA moiety is the tethered nucleobase and the penultimate PNA monomer moiety contains a nucleobase this is within the definition of a conjugate which is a "reporter molecule" as given in instant claim 5. Such PNAs are also species of claim 40 of the copending application.

Similarly, instant claims 37 and 39 includes such species as described above with more specific PNA chemical structure thus also supporting this rejection over the copending application. It is noted that instant claims 39 and 49 require an R group on the linkage to the nucleobase to be a conjugate. Such R groups are given in the copending application claims in that alkylthio or amino groups are present as options which are well known crosslinking agent sites. Instant claims 41, 47, and 48 require a conjugate at certain R groups which includes linkages in the backbone of the PNA. Such conjugates may be crosslinking agents as in amino or alkylthio groups that are cited as options for the backbone R groups in claim 40 of the copending application thus documenting a common embodiment. The remaining claims of the copending application are included herein as they include a basic PNA polymer as also claimed in claim 40 of 08/765,798. The

equivalent substitution of C-pyrimidine nucleobase for other nucleobases, such as in the instant claims, is lacking in 08/765,798; but Switzer et al. clearly describe the equivalence of such nucleobases in the abstract and the document as a whole. Such functional equivalents are deemed thus suggested and motivated thereby for documenting the common embodiments between the instant claims and those of 08/765,798.

This is a *provisional* obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 5, 8-10, 12, 13, 15, 20, 22-24, 30-33, 37, and 39-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24, 26, and 28 of copending application Serial No. 09/106,667. Although the conflicting claims are not identical, they are not patentably distinct from each other because various embodiments in each set of claims are common embodiments between said sets of claims. For example, claim 28 of the copending application include PNAs with various side chains off the backbone, which include alkylthio or amino side chains which are well known to be crosslinking agents, as well as a reporter molecule as an L group. A reporter molecule is instantly included as a conjugate. The instant claims includes reporter molecules as the L group in the basic PNA structures as

well as backbone conjugate moieties as noted above which therefore includes the structure of claim 28 of the copending application. The remaining claims of the copending application are included herewith due to their being limited to basic normal PNA components which are also those of the instant claim.

This is a *provisional obviousness-type* double patenting rejection because the conflicting claims have not in fact been patented.

No claim is allowed.

Applicants' amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

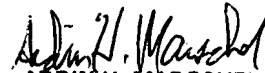
Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703)308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703)308-0196.

August 24, 2001


ARDIN H. MARSCHEL
PRIMARY EXAMINER